

Effectiveness of Urinary Adulteration Products and Detoxifying Agents in Masking Drugs of Abuse Testing

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On September 15, 1986, President Regan issued Executive Order No 12564 directing federal agencies to achieve a drug free work environment. Then the Department of Health and Human Services developed guidelines for drugs of abuse testing. In Military where the urine collection process is supervised, chances of an adulterated specimen are remote but in pre-employment testing where direct supervision of specimen collection is not practiced, a person may attempt to beat a drug test by adulterating the specimen.

Reports of usage of household chemicals such as bleach, table salt, laundry detergent, toilet bowl cleaner, vinegar, lemon juice and Visine eye drop for adulterating urine specimens were published in medical literature as early as 1988. Most of these adulterants except Visine eye drop can be detected by routine specimen integrity tests. More recently a variety of products are commercially available which can be ordered either through the Internet sites (<http://www.bdtzone.com>, <http://pass-drug-test.com> etc) or toll free numbers. The Quick Fix Synthetic Urine is a bottle of premixed urine with all the characteristic of natural urine. The product can be heated in a microwave oven for up to 10 seconds in order to achieve a temperature between 90 to 100⁰F.

Commercially available products to beat drug tests can be classified under two broad categories. The first category is taking specific fluids or tablets along with plenty of water to flush out drugs and metabolites. Many of these products can produce dilute urine and the concentrations of drugs or metabolites can be significantly reduced. Common products are Absolute Detox XXL drink, Absolute Carbo Drinks, Ready Clean Drug Detox Drink, Fast Flush Capsules and Ready Clean Gel Capsules. The second category of products available is in vitro urinary adulterants, which should be added to urine after collection in order to pass a drug test. Stealth, Klear, Clean ADD-IT-ive, Urin-Aid and Urine Luck are urinary adulterants available through the Internet.

A negative result for the presence of abused drugs in a urine specimen does not mean that no drug was present. It is also possible that the amount of drug was below the cut-off values used in the drug testing protocol. Diluting urine is a simple way to beat otherwise positive drug tests if the original concentrations of drugs in the urine are moderate. Use of flushing and detoxification is frequently advertised as an effective mean to pass drug tests. Published reports indicate that Naturally Clean Herbal tea, Golden Seal root and hydrochlorothiazide, a diuretic can cause false negative results due to diluted urine.

Laboratories routinely checks pH, temperature, specific gravity and creatinine of urine to detect validity of specimens. Although adulteration with common household compounds can be detected by this mechanism, the presence of newer urine adulterants like Urine Luck, UrinAid, Klear and Whizzies can not be detected by urine specimen integrity test. Wu et al reported that the active ingredient of “Urine Luck” is 200 mmol/L of pyridinium chlorochromate (PCC). This product may help beat drug tests for marijuana and opiate. Other product “Klear” and “Whizzies” contain potassium nitrite and are effective in masking moderate concentrations of marijuana metabolites from detection by immunoassays or Gas chromatography/ mass spectrometry. Stealth consists of two vials, one containing a powder (peroxidase) and another vial containing a liquid (hydrogen peroxide). Both products should be added to the urine specimen. Stealth is capable of producing false negative results using immunoassay methods when marijuana metabolite, LSD and opiate (morphine) were present in the urine at 125-150% of cutoff values.

Glutaraldehyde has also been used as an adulterant to mask urine drug tests (15). This product is available under the trade name of “UrinAid”. Glutaraldehyde at a concentration of 0.75% volume can lead to false negative screening results for marijuana test using immunoassays. At higher concentrations (1-2%) amphetamine, methadone, benzodiazepine, opiate and cocaine metabolite tests are also affected.

The presence of nitrite, pyridinium chlorochromate and Stealth can be detected in adulterated urine specimen by various spot tests. Recently on-site adulterant detection devices are commercially available. Peace and Tarani evaluated performance of three on-site devices, Intect 7, MASK Ultrascreen and AdultaCheck 4 and concluded that Intect 7 was most sensitive and correctly identified all adulterants. AdultaCheck 4 did not detect Stealth, Urine Luck or Instant Clean ADD-it-ive.

Hair and saliva specimens are alternatives to urine specimens for drug testing. Several products are available for sale through the Internet that claim by washing hair with these shampoos can aid a person to pass a drug test. Saliva samples are also used for drug testing. A mouthwash is available commercially claiming that by rinsing the mouth twice with this product can help a person to beat saliva based drug testing which is often a popular method of testing by insurance companies. However, effectiveness of such products in beating drug tests has not been clearly established by scientific research.

In conclusion, adulterants impose a new challenge in the testing for abused drugs. Routine specimen integrity testing is not adequate to detect the presence of more recently introduced adulterants such as Urine Luck, Klear, Stealth which may effectively masking modest amounts of abused drugs from detection. Intake of herbal cleansing agents and diuretic may also aid a person to beat drug tests by producing diluted urine with reduced concentrations of drugs.